6875 hana™
HIP AND KNEE ARTHROPLASTY
SURGERY TABLE
MAINTENANCE & REPAIR

hana™

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Manufactured by Mizuho OSI 2007 **U.S. Patents Pending**

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IMPORTANT NOTICES

CAUTION:
To ensure safe operation of the equipment, please READ THESE INSTRUCTIONS COMPLETELY and keep this manual readily available for future reference.

Carefully observe and comply with all warnings, cautions and instructions placed on the equipment or described in this manual.

In this manual, the WARNING symbol is intended to alert the user to the presence of important operation, maintenance, or safety instructions.

Dans ce manuel, le symbole AVERTISSANT est projeté d'alerter l'utilisateur à la présence d'opération importante, l'entretien, ou les instructions de sûreté.

This device is to be used by trained professional personnel only.

Cet appareil va être utilisé le personnel en train professionnel seulement.

Classification and Table Rating

These products are considered *Class I Exempt* and have an of *IPX-0* rating.

PROTECTION AGAINST ELECTRICAL SHOCK HAZARD:

This symbol indicates this equipment is an applied part, TYPE B and is generally suitable for applications involving external or internal contact with the patient, excluding the heart. The patient circuit is connected to protective earth and this equipment should be connected only to outlets with a protective earth ground.

LA PROTECTION CONTRE LE DANGER DE CHOC ELECTRIQUE:

Ce symbole indique que cet équipement est un B DE TYPE de partie appliqué et est généralement convenable pour les applications contact impliquant, externes ou internes avec le malade, excluant le coeur. Le circuit patient est connecté à la terre protective et cet équipement devrait être seulement connecté aux sorties avec un sol de terre protectif.

WARNING:

If the integrity of the power source is in doubt, the equipment shall be operated from its internal electrical power source (battery).

AVERTISSANT:

Si l'intégrité de l'externe protectif terre est en doute, l'équipement sera opéré de son interne électrique pouvoir (pile).

This symbol **indicates an external ground stud that is required for use when the AC power cable is not connected to a protective earth ground outlet in your operating room or facility.**

Ce symbole **indique qu'un clou de sol externe qui est exigé pour l'usage quand le câble d'alimentation n'est pas connecté à une sortie de sol de terre protective dans votre pièce d'opération ou à la facilité.**

To protect the patient, hospital staff and the table from any possible hazards, an external ground wire connection is required between the external ground stud and protective earth ground.

Pour protéger le malade, le personnel d'hôpital et la table des dangers possibles, une connexion de fil de sol externe est exigée entre le clou de sol externe et le sol de terre protectif.

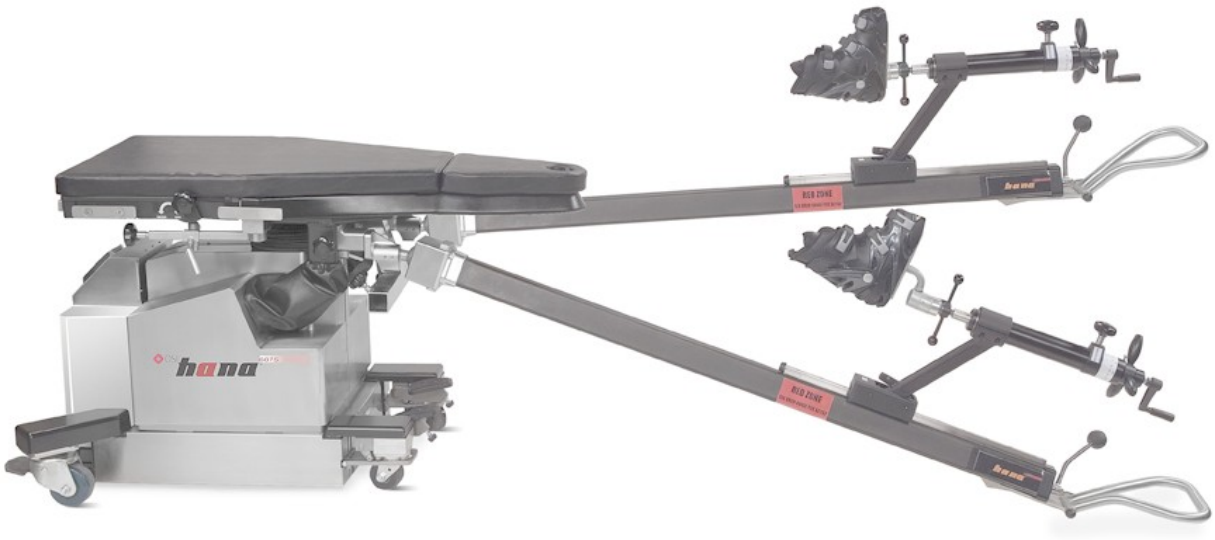
1.0 INTRODUCTION

1.1 General Description

The OSI 6875 hana™ Surgery Table is designed to hold a patient undergoing the single incision, tissue sparing Anterior Approach Total Hip Replacement and Total Knee Arthroplasty surgical procedures.

It is a stand-alone, single-pedestal, AC powered or internal battery operated table designed to position a patient in a supine position during surgical procedures. The hana™ has three primary powered functions; Height up/down, left/right lateral roll and Trendelenburg/Reverse Trendelenburg. Electromechanical actuator-motors perform these motions which are controlled by means of a Hand Pendant with functions clearly labeled. The table is also equipped with powered left and right Femur Lifts which are controlled by a Foot Pedal providing the surgeon the ability to raise and lower the Femoral Hook during the Anterior Approach Total Hip Arthroplasty.

Four (4) independent, manual caster floor locks are utilized to stabilize the table in the operating location. An auxiliary control panel is provided for control of the table if the hand pendant is lost or becomes disabled.



6875 hana™ Table, right-side view.

1.2 Specifications

The 6875 hana™ Table is Class 1 Exempt, Type B Medical Device with an IPX-O rating.
The table is designed to position a patient weighing up to 450 pounds (205 kg).
Table length (with Leg Spars installed and parallel) is 125 inches (3175 mm).
Table width (at base) is 35 inches (889 cm).
NOTE: *Maximum width with Leg Spars positioned outward could exceed 10 feet (3048mm).*
Table height with all standard components attached will operate within 8-foot ceiling area (2338 mm).
Table weight is 879 pounds (400kg).
Table shipping weight is 1,000-1,200-pounds (450-545kg).

Table Top length is 48.5 inches (1231 cm).
Table Top width is 21.5 inches (546 mm).
Table Top height range (measured from the floor) is 29 inches to 49 inches (736mm to 1,245mm).
Table Top lateral tilt range is +/- 12 degrees.
Table Top Trendelenburg (pitch) range is +/- 12-degrees (+/- 2 deg).
Table Top maximum deflection under full load is less than 2 inches (51 mm) at the cantilever end.
Table Top radiolucent equivalency is less than 1-mm aluminum.

Table input power requirement is: 100 VAC, 50/60 Hz, 4 Amps; 120 VAC, 60 Hz, 4 Amps; or 220 VAC, 50 Hz, 2 Amps, 10% / 6 minute Duty Cycle
The table may also be operated on internal battery power: 24VDC battery voltage, 15Amps, 360 Watts
The expected working life of a fully charged battery is approximately 12 hours at a 10% duty cycle.

1.3 Shipping

The 6875 hana™ Table must be shipped using appropriate OSI Shipping methods and Instructions. During shipment the 6875 hana™ Table is to be kept in an environment within the following limits:

- Ambient temperature: -4 degrees F. (-20 degrees C) to 122 degrees F (+ 50 degrees C)
- Relative humidity from 10% to 100%, including condensation
- Atmospheric pressure from 50k to 110k Pascal

1.4 Storage

When not in use the 6875 hana™ Table should be stored in a clean dry environment with temperature between 32°F (0 degrees C) & 120°F (49 degrees C).

To insure the internal battery is always fully charged and ready for use, the table must be stored with the power cord plugged into a grounded, hospital grade AC power source (100 VAC, 120 VAC, or 230 VAC) and with the On/Off Power Switch toggled “ON”.

1.5 Glossary of Terms

The glossary of terms assumes the patient is supine with their head at the “Head-end of the Table” (toward Control Panel) and their feet are at the “Foot-end of the Table” (toward Leg Spars). The Hand Pendant functions are oriented for this position only.

“Head End of table” refers to the end of the table where the power cord, "ON/OFF" Power Switch, and Control Panel are located; otherwise referred to as the “pedestal end”.

“Foot End of table” refers to the opposite end of the table also referred to the “leg spar end".

“Control Panel” is a panel of buttons and lights located on the back of the pedestal.

“Pedestal” refers to the main column structure that supports the tabletop.

“Left side of the table” refers to the table as you stand at the head end of table.
This also corresponds to the Hand Pendant button labeled “LEFT LATERAL ROLL”.

“Right side of the table” refers to the table as you stand at the head end of table.
This also corresponds to the Hand Pendant button labeled “RIGHT LATERAL ROLL”.

“Raise the table” refers to raising the height of the table.
This also corresponds to the Hand Pendant button labeled “HEIGHT UP”.

“Lower the table” refers to lowering the height of the table.
This also corresponds to the Hand Pendant button labeled “HEIGHT DOWN”.

“Trendelenburg” refers to lowering the height of the head-end of the table only. The corresponding Hand Pendant button is labeled “TREN”.

“Reverse Trendelenburg” refers to raising the height of the head-end of the table only. The corresponding Hand Pendant button is labeled “REV TREN”.

”Return to Level” or “Level the table” refers to returning the tabletop to a state of level regardless of height. The corresponding Hand Pendant button is labeled “RETURN TO LEVEL”. Holding the “RETURN TO LEVEL” button longer than approximately three seconds will also lower the tabletop to its lowest position.

“Hospital Grade" outlet refers to a 120VAC outlet properly wired with earth ground: Neutral to Common = 120VAC; Neutral to Ground = 120VAC; Common to Ground less than zero point five (0.5) VAC.

2.0 CONTROLS IDENTIFICATION

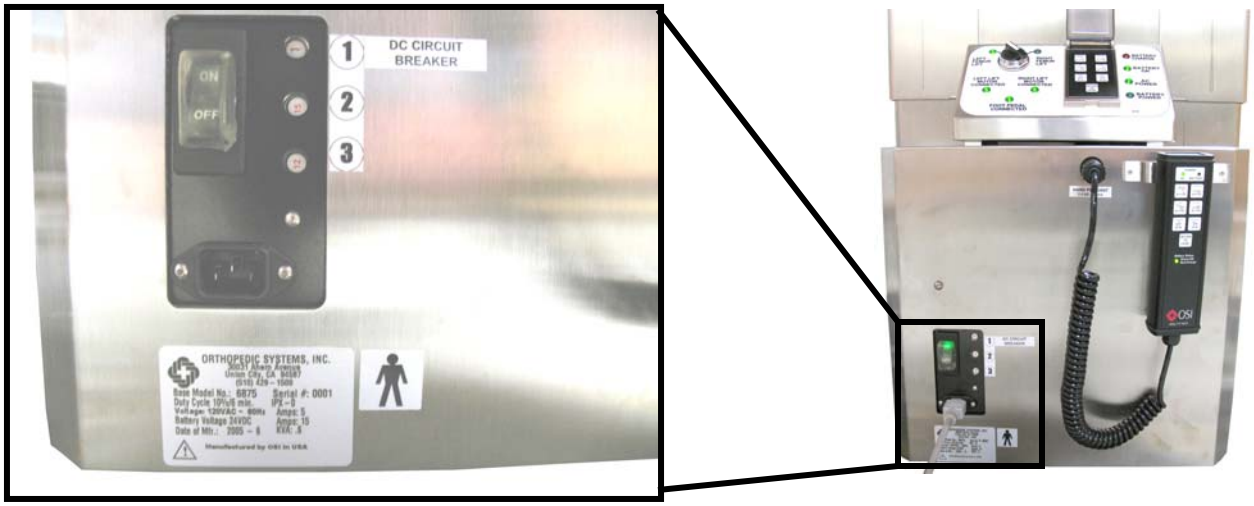
2.1 Table Orientation

The major components of the 6875 hana™ Table are identified below. The table is described as having a "Head End" and a "Foot End". The On/Off Power Switch and the Power Cord receptacle are located at the "Head End" of the table.

Right-side View with Patient in Supine Position

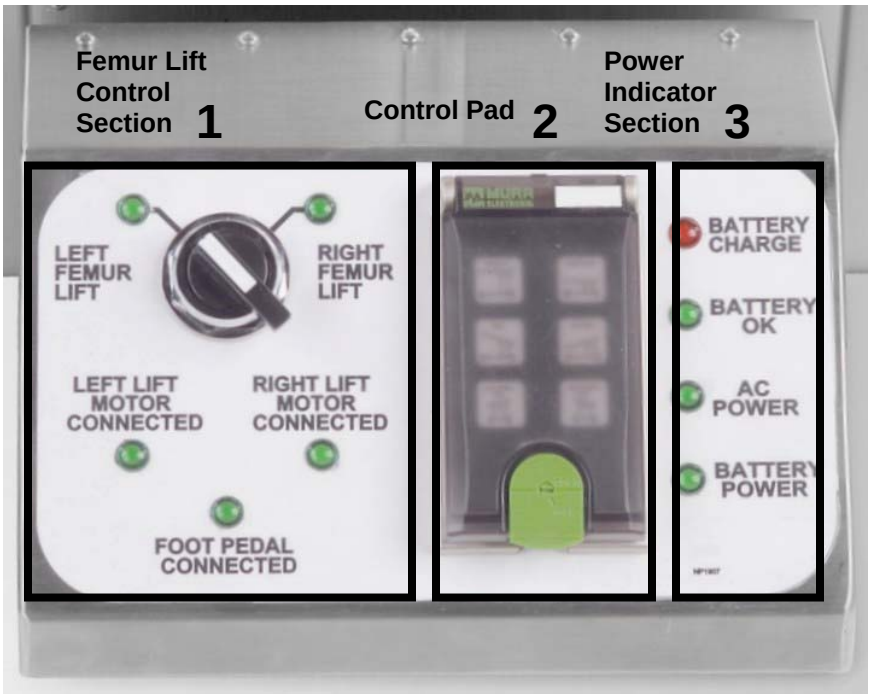
2.2 Major Controls Location

The Control Panel, On-Off Power Switch, Power Cord receptacle and Model Number/Serial Number identification label are located at the head-end of the table.



Head End Control Panel

2.3 Control Panel Identification



Control Panel

The Control Panel is divided into 3 sections:

Section 1: Femur Lift control section. Selection switch to change between Right and Left Femur Lift operation. Indicators to show if Femur Lift is connected (Left, Right). Indicator to show if Foot Pedal is connected. (Indicators: Lit: Parts are connected, Not Lit: Parts not connected)

Section 2: Control Pad. The Control Pad and the Hand Pendant Control Table Up/Down, Lateral Tilt and Trendelenburg. See section 3.4 for operation of the Hand Pendant.

Section 3: has indicators to notify user of the following conditions:

1. Battery Condition
    a. Charge: Battery power low or no battery installed.
    b. OK: Battery has sufficient power to operate table
2. AC Power: Indicates table is running on line (100, 110, 220)V power from wall receptacle.
3. Battery Power: Table is on running from internal batteries.

3.0 BASIC OPERATION

3.1 Control Operation

Plug the power cord into the power cord receptacle, located at the Head End of the table and into a properly grounded receptacle. Refer to the Model/Serial Number label on the Head End of the table for input voltage requirements. Toggle the On/Off Power Switch to "ON". The green light in the switch illuminates indicating that AC power is applied to the table. This switch functions as a combination on/off power switch, circuit breaker and pilot light.

3.2 Caster Floor Locks

Prior to transferring a patient onto the table and at all times when the table is in use, ensure all four (4) independent, manual caster floor locks are in the locked position. To lock the caster lock, step on the foot pad and depress to the floor. To unlock, slide foot under pad and lift to disengage lock.

Floor Lock in the Unlocked Position

Floor Lock in the Locked Position

3.3 Moving the Table

After all four (4) floor locks are unlocked the table can be rolled for relocation. It is best that the table be rolled with the Foot End pointed in the direction of travel. The 6875 hana™ Table is heavy and a minimum of two people should move it, one at the Head End, one at the Foot End and care should be taken to control it when rolling.

CAUTION: If the table is allowed to roll too fast, it may be difficult to stop or turn.

LA PRUDENCE: Il la Table est permise de rouler aussi pour jeûner, ce sera difficile à arrêter ou tourner.

3.4 Hand Pendant Control

The 6875 hana™ table is controlled by means of a Hand Pendant. The Hand Pendant is plugged into the receptacle labeled “HAND PENDANT” on the Control Panel. Flip main “ON/OFF Power Switch to “OFF”. Plug in Hand Pendant connector and rotate screw-locking collar clockwise until hand tight. Flip main “ON/OFF Power Switch to “ON”, wait twenty seconds for table to “boot-up” and run self-diagnostics (all Hand Pendant lights will cycle on and off, then remain on). To operate any of the desired functions, press and hold the appropriate button on the Hand Pendant until the desired position is achieved.

The Hand Pendant is equipped with a "RETURN TO LEVEL" button. This button functions to first, level the Lateral Roll; second, level the Trendelenburg; third, re-level lateral roll; and fourth, brings the table to its lowest position. A delay of three (3) seconds is programmed after the re-level of lateral roll is completed before returning to its lowest position. To achieve the final position, this button must be held continuously until motion stops. The controller considers the table to be level if it is within +/- two (2) degrees. If the "RETURN TO LEVEL" button is pressed while the table is within this range, it may not move. If it is required to adjust the table to a position closer to zero degrees, press the appropriate function button on the Hand Pendant until the desired position is achieved.

6875 hana™ Table Hand Pendant

3.5 Leg Spars

The 6875 hana™ table is equipped with two adjustable Leg Spars. Each
Leg Spar is designed to support the foot in the traction boot and allow for abduction, adduction, raising or lowering of the leg. When the leg is in a desired position the spar can be locked to maintain that position. A dial is provided to gauge the degree of internal and external rotation and should be zeroed out and locked in place utilizing the thumb screw when the foot is in the neutral position. Gross and fine traction are also controlled at the foot end of the spar.
To unlock the spar to abduct, adduct, raise or lower the leg, hold the spar with one hand on the looped handle and move the knobbed lever from the Locked to Unlocked position (refer to picture below). When you have positioned the leg where needed lock the spar by returning the knobbed handle to the Locked position. The spar should be held by the looped handle at all times when it is not locked.

Spar Ball Joint Lock/Unlock Loop Handle of Leg Spar

CAUTION: Leg Spars can be damaged if allowed contact with floor during table operation. During table movement, clear area of any obstructions or obstacles.

LA PRUDENCE: les Perches de Jambe peuvent être endommagées si a permis le contact avec le plancher pendant l'opération de table. Eclaircir de n'importe quelles obstructions ou de n'importe quels obstacles pendant le mouvement de table.

6875 hana™ Table with Leg Spars Attached & Set Up for Bilateral Total Hip Replacement

4.0 THE ELECTRICAL SYSTEM

4.1 Description

The electrical system provides control of all table functions and is comprised of a power cord, an On/Off circuit-breaker switch, wire harnesses, a power supply, a controller circuit, a hand pendant, floor lock jackscrew-actuators, and various electromechanical actuators. Electric motor-driven lead-screw actuators manipulate the table height, lateral roll and Trendelenburg functions. The input power requirement is 100 VAC 50/60Hz, 4 Amp, 120 VAC 60Hz, 4 Amp or 230 VAC 50Hz, 2 Amp, 10% / 6 minute Duty Cycle as indicated on the Serial Number label. Refer to 6875 hana™Table Electrical Interconnect Diagram in maintenance manual for details of the electrical system.

4.2 On/Off Power Switch

An illuminated On/Off Power Switch and circuit breaker is located on the Head End of the table. When illuminated, it indicates that the table is plugged into a live electrical outlet and the power is on. (When the table is turned on using battery power, this switch will not illuminate). This switch also serves as a circuit breaker. In the event of an overload condition this switch will trip off. To reset, push to the OFF position and then the ON position.

NOTE: *Determine the source of the overload prior to resetting this switch.*

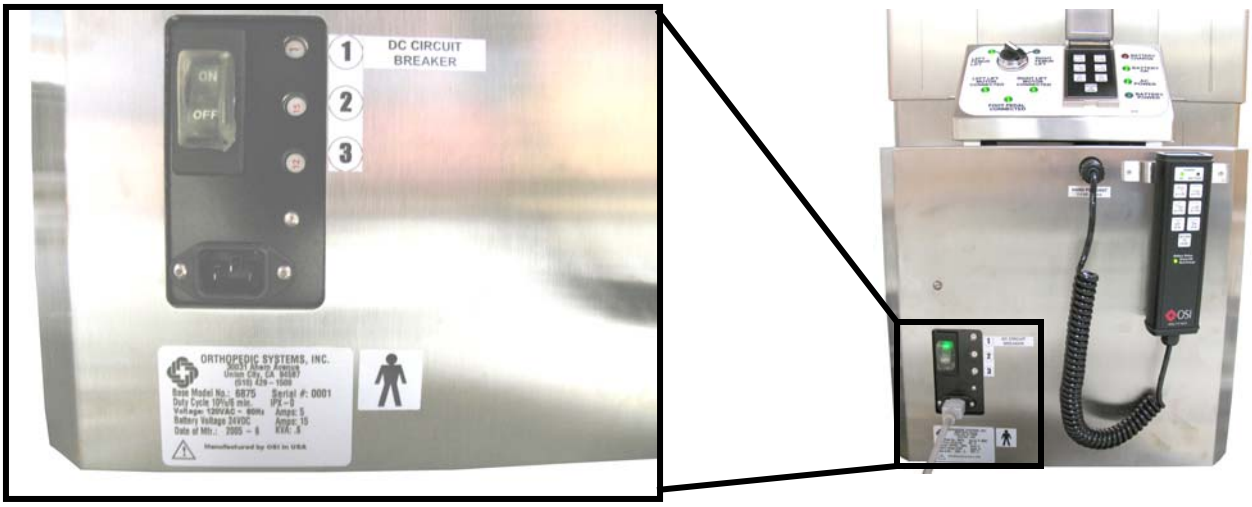
4.3 Component Circuit Breakers

The electrical system includes individual component 24-volt circuit breakers, located at the head end of the table. If a short circuit occurs in the low voltage circuit, the breaker will trip as indicated by a button protruding from the access hole. To reset, press the button in and release.

NOTE: *Determine the source of the overload prior to resetting this button.*

4.4 Power Cord

The table is equipped with a detachable standard IEC power cord with the appropriate 120 VAC hospital grade connector (230 volt versions do not include the power connector). The power cord is connected to the table at the IEC power entry socket located near the "ON/OFF" switch, at the head end control panel.



Head End Base and Control Panel

4.5 Battery System

The 6875 hana™ Table is equipped with a battery system, which consists of two 12 volt batteries in series to provide 24 volts. Due to the relatively low power consumption of the 6875 hana™ Table, it can be used on battery power for up to 12 hours at 10% duty cycle.

WARNING:

If the integrity of the external protective earth conductor is in doubt, the equipment shall be operated from its internal electrical power source (Battery).

AVERTISSANT:

Si l'intégrité de l'externe protectif terre est en doute, l'équipement sera opéré de son interne électrique pouvoir (pile).

This symbol **indicates an external ground stud that is required for use when the AC power cable is not connected to a protective earth ground outlet in your operating room or facility.**

Ce symbole **indique qu'un clou de sol externe qui est exigé pour l'usage quand le câble d'alimentation n'est pas connecté à une sortie de sol de terre protective dans votre pièce d'opération ou à la facilité.**

To protect the patient, hospital staff and the table from any possible hazards, an external ground wire connection is required between the external ground stud and protective earth ground.

Pour protéger le malade, le personnel d'hôpital et la table des dangers possibles, une connexion de fil de sol externe est exigée entre le clou de sol externe et le sol de terre protectif.

Battery charge status is shown via a LED on the hand pendant labeled "Battery Status".
If illuminated green = OK.
If illuminated red = charge.
If a recharge is required, charge a minimum of 3 hours. A full charge should be available after 18 hours.
To charge the batteries simply plug the power cord into an appropriate “hospital grade” outlet and turn the on/off power switch “ON”. It is important to plug in the table as soon as possible after the battery status LED is illuminated red. Life of the battery can be shortened if the table remains unplugged and turned on for extended period of time. While in storage it is desirable that the table be plugged in and the power switch turned on so that the batteries remain charged. If this is not possible, the batteries must be charged for at least three hours a week. This can be accomplished when using the table under AC power since the system batteries are automatically charged while the table is plugged in and turned on.

Both batteries should be replaced every five (5) years or when they fail to hold a charge. See Section 7.4 or User Guide for disposal instructions.

5.0 INSPECTION

5.1 Acceptance & Transfer

Please refer to the 6875 hana™ Table User Guide (part number NW0466).

5.2 Per-procedure/Post-procedure

Please refer to the 6875 hana™ Table User Guide (part number NW0466).

5.3 Semi-Annual

It is recommended to perform a Preventative Maintenance (PM) check of your 6875 hana™ Table (see Section 7 Maintenance).

A PM Checklist is available from OSI Technical Service Department (800-777-4674).

6.0 FUNCTION CHECK

Perform all steps in this procedure. For a complete definition of terms used in this procedure, please refer to the “Glossary of Terms” section of the manual.

1. **Plug in the Hand Pendant.**
   Verify the main “ON/OFF” Power Switch is “OFF” (located on table base front, below Control Panel). Plug the Hand Pendant cable-connector into the "HAND PENDENT" receptacle (located on table base front, below Control Panel).

2. Plug the Foot Pedal into the port at the foot end of the table base. The flange should be flush or below surface of receptacle.

3. Attach Right & Left Femur Lift assemblies, and connect their electrical cords.

   Attach the right or left Femur Lift to the corresponding mounting bracket by sliding into the bracket and secure by turning the locking knob clockwise until hand tight.

   Attach the power cord connector extending from the mounting bracket to the port on the bottom of the Femur Lift and rotate screw-locking collar clockwise until hand tight.

4. **Apply AC power.**
   Plug the AC Power Cord into an appropriate “hospital grade” AC outlet and into the Power Receptacle (located on rear of table base).
   NOTE: *Verify proper outlet voltage for your model table.*
   Flip the main “ON/OFF” Power Switch to “ON” and confirm the following:
   4.1. The main “ON/OFF” Power Switch illuminates indicating AC power is applied.
   4.2. The “AC Power” light on Control Panel illuminates green.
   NOTE: *The table may be used with AC power even if the red “CHECK BATTERY” light is on (indicating batteries needs charging).*

5. **Control Panel check.**
   5.1. Power Status Lights.
   Observe the table Power Status lights located on the Control Panel.
   - If green “AC Power” light is on, continue to Battery Power Check section below.
   - If red “Battery Check” light is on, charge battery for a minimum of 3 hours (leave Power Cord plugged in and main “ON/OFF” Power Switch “ON”). If red “Battery Check” light remains on after three (3) hours, continue to charge battery for up to 18 hours.
   - If green “Battery OK” light comes on during charging, continue checks below.
   - If green “Battery OK” light does not come on after 18 hours of charging, refer to Battery System, Section 4.4.

   5.2. Confirm green “FOOT SWITCH CONNECTED” light is on.
   5.3. Confirm green “LEFT LIFT CONNECTED” light is on.
   5.4. Confirm green “RIGHT LIFT CONNECTED” light is on.
   5.5. Switch “Left/Right Femur Lift Switch” to “LEFT HOOK”; confirm green “LEFT FEMUR LIFT” light is on.
   5.6. Switch “Left/Right Femur Lift Switch” to “RIGHT HOOK”; confirm green “RIGHT FEMUR LIFT” light is on.
   5.7. While using the Control Panel function buttons;
   - Press and hold "HEIGHT UP" button. Confirm the tabletop moves up.
   - Press and hold “HEIGHT DOWN" button. Confirm the tabletop moves down.
   - Press and hold "REV. TREN" button. Confirm foot-end of tabletop becomes lower than the head-end.
   - Press and hold "TREN" button. Confirm head-end of tabletop becomes lower than the foot-end.
   - Press and hold "LEFT LATERAL ROLL" button. Confirm the tabletop tilts to the left.
   - Press and hold "RIGHT LATERAL ROLL" button. Confirm the tabletop tilts to the right.

- Move Table Top out of level by raising height approximately two inches, tilting tabletop (left or right) and activate Trendelenburg approximately five degrees. Press and hold the "RETURN TO LEVEL" button and observe that the tabletop:
  1) Levels the Lateral Roll.
  2) Levels the Trendelenburg.
  3) Re-levels the Lateral Roll.
  4) After a three (3) second delay, lowers to its lowest position.
  Confirm that the table top is level and at its lowest height position.

6. **Hand Pendant check.**
   6.1. Confirm green “AC” Power light is on.
   6.2. Confirm green “Battery Status” light is on.
   6.3. While using the Hand Pendant function buttons;
   - Press and hold "HEIGHT UP" button. Confirm the tabletop moves up.
   - Press and hold “HEIGHT DOWN" button. Confirm the tabletop moves down.
   - Press and hold "REV. TREN" button. Confirm foot-end of tabletop becomes lower than the head-end.
   - Press and hold "TREN" button. Confirm head-end of tabletop becomes lower than the foot-end.
   - Press and hold "LEFT LATERAL ROLL" button. Confirm the tabletop tilts to the left.
   - Press and hold "RIGHT LATERAL ROLL" button. Confirm the tabletop tilts to the right.
   - Move Table Top out of level by raising height approximately two inches, tilting tabletop (left or right) and activate Trendelenburg approximately five degrees. Press and hold the "RETURN TO LEVEL" button and observe that the tabletop:
     1) Levels the Lateral Roll.
     2) Levels the Trendelenburg.
     3) Re-levels the Lateral Roll.
     4) After a three (3) second delay, lowers to its lowest position.
     Confirm that the table top is level and at its lowest height position.

7. **Battery Power Check**. Ensure the Foot Pedal and Femur Lift function correctly. On the Control Panel verify the Femur Lift is connected by the corresponding LED illuminating when the appropriate lift is selected. Depress the Foot Pedal, “UP” and observe the lift raise to its fullest height and then press “DOWN” and observe the lift lower to its lowest position. Complete this process for both the right and left Femur Lifts.

   7.1. Confirm Green Battery OK light on Control Panel and Hand Pendant are ON. If not, charge Battery per section 4.4.
   7.2. With table main “ON/OFF” Power switch “ON”, unplug AC Power Cord from AC outlet or table Power Receptacle and confirm the following:
   - Green “AC POWER” light on Control Panel goes dark. Green “BATTERY POWER” light comes on.
   - Green “BATTERY OK” remains on.
   - The main (illuminated) ON/OFF Power Switch goes dark.

   7.3. Perform Hand Pendant check using battery power.
   - Press and hold "HEIGHT UP" button. Confirm the tabletop moves up.
   - Press and hold “HEIGHT DOWN" button. Confirm the tabletop moves down.
   - Press and hold "REV. TREN" button. Confirm foot-end of tabletop becomes lower than the head-end.
   - Press and hold "TREN" button. Confirm head-end of tabletop becomes lower than the foot-end.
   - Press and hold "LEFT LATERAL ROLL" button. Confirm the tabletop tilts to the left.
   - Press and hold "RIGHT LATERAL ROLL" button. Confirm the tabletop tilts to the right.

- Move tabletop out of level by raising height approximately two inches, tilting tabletop (left or right) and activate Trendelenburg approximately five degrees. Press and hold the "RETURN TO LEVEL" button and observe that the tabletop:
  1) Levels the Lateral Roll.
  2) Levels the Trendelenburg.
  3) Re-levels the Lateral Roll.
  4) After a three (3) second delay, lowers to its lowest position.
  Confirm that the table top is level and at its lowest height position.

7.0 MAINTENANCE

7.1 Cleaning and Disinfection

NOTE: *Never pour any liquid directly onto the table. Never subject the 6850 Table to an equipment washing machine.*

USE OF IODOPHORS WILL CAUSE STAINING.

Table Exterior:

1. Exterior surface should be regularly wiped clean with a mild detergent solution and wiped dry with a soft lint-free cloth.
2. Care should be taken to avoid exposing the table to excessive moisture. Flooding, fogging or steam cleaning is not recommended.
3. Blood or other fluids, etc., if allowed to remain on the table for a long period of time, will require special cleaning to remove. A 5% acetic acid solution or white vinegar and water solution is especially good for this purpose.
4. Cleaning with a good commercial cleaning compound, such as Stainless Steel Magic or Acme White Finish, and then buffing the surface by hand can correct staining and discoloration of plated or stainless steel surfaces only.
5. To disinfect exterior surfaces use a quaternary ammonium or similar type disinfectant compound according to manufacturer's directions for use. Wipe dry with a soft lint-free cloth.

NOTE: *Failure to thoroughly dry surface after cleaning and disinfecting may result in rust.*

Casters:
Casters should be cleaned and disinfected in the same manner as table exterior. Access to the casters is achieved by removing the sheet metal enclosures at each end of the table base.

NOTE: *Before removing any sheet metal covers the table must be turned off and unplugged. Dangerous high voltage may be present in the circuitry under the covers. Only trained technicians should perform this task.*

7.2 Adjustment - Spar Ball-joint Lock Handle

Overview:
With break-in wear the patient leg "Spar Ball Joint Lock" handle (Lock Handle) may require adjustment to allow proper functionality. If the Spar does not move freely when the Lock Handle is in "Unlock" position, or does not hold position when handle is in "Locked" position, adjustment is required.

Tools Required:
Wrench, open, box-end, or adjustable, 5/8th inch.

Procedure Overview:
1. Test Leg Spar.
2. Lock Leg Spar in place.
3. Loosen Lock Nut and Lock Handle.
4. Reposition Lock Handle and retighten Lock Nut.
5. Re-test Leg Spar

Procedure:
1. While firmly holding Leg Spar from dropping, rotate Lock Handle (item 1) counter-clockwise to the "UNLOCK" position and determine if Leg Spar is free to move without binding or friction. If much binding/friction is felt adjust Lock Handle position
2. Rotate Lock Handle clockwise toward the "LOCKED" position until Leg Spar is held firmly in place parallel to the floor and in-line with the table.
3. Using 5/8th inch wrench, loosen Lock Nut (item 2) until Lock Handle is free to be repositioned. There are serrated teeth on both the Lock Handle and mating fitting.
4. Reposition Lock Handle to approximately the two-o'clock position and with serrated teeth engaged, retighten Locking Nut with the 5/8th inch wrench.
5. While firmly holding Leg Spar from dropping, rotate Lock Handle counter-clockwise to the "UNLOCK" position and determine that Leg Spar is free to move without binding or friction.

7.3 Preventative Maintenance Checklist

A Preventative Maintenance (PM) Checklist is available from OSI Technical Service Department (800-777-4674).

7.4 Disposal of Electrical Components

Refer to User Guide for disposal of electrical components.

8.0 TROUBLESHOOTING

8.1 Table Malfunction

- Check input power; verify Power Cord is plugged into a live electrical outlet.
- Verify Power Switch is "ON"; the switch illuminates green.

8.2 Diagnostics Tree

- **Table is "dead"; no functions are operational.**
  - Verify Power Cord is plugged into an appropriate AC receptacle and into the Power Cord Socket (located on table-base panel).
  - Verify Power Switch (located on table-base panel) is "ON". If illuminated, table is connected to live AC power. If no illumination, table may still operate on internal battery power (Hand Pendant control buttons and lights will be illuminated).
  - Verify Circuit Breaker (part of Power Switch located on table-base panel) is not tripped "OFF" (indicating table power overload condition, find overload source prior to resetting). To reset, flip Power Switch / Circuit Breaker "OFF", then "ON".
  - Verify Component Circuit Breakers (located on table-base panel) are not tripped "OFF" (indicating component power-overload condition, find overload source prior to resetting). Observe the three component circuit breaker buttons are not protruding from circuit breaker access holes.
  - Call OSI Technical Service (800-777-4674) for parts or repair.

- **"Height Up" or "Height Down" not functioning.**
  - Verify Power Cord is plugged into an appropriate AC receptacle and into the Power Cord Socket (located on table-base panel).
  - Press and hold Hand Pendant "Height Up" or "Height Down" control button. Observe tabletop movement.
  - Verify Hand Pendant is properly plugged into a Hand Pendant receptacle; observe Hand Pendant control buttons illuminate green.
    NOTE: *Table Power Switch must be turned "OFF" before disconnecting or connecting Hand Pendant.*
  - Verify if other Hand Pendant control buttons are functional. If so, replace Hand Pendant.
    NOTE: *Table Power Switch must be turned "OFF" before disconnecting or connecting Hand Pendant.*
  - If on battery power, verify proper charge; observe green "Battery OK" light is on.
  - Verify Power Switch is "ON".
  - Call OSI Technical Service (800-777-4674) for parts or repair.

- **"Trendelenburg" or "Reverse Trendelenburg" not functioning.**
  - Verify Power Cord is plugged into an appropriate AC receptacle and into the Power Cord Socket (located on table-base panel).
  - Press and hold Hand Pendant "Trendelenburg" or "Reverse Trendelenburg" control button. Observe tabletop movement.
  - Verify Hand Pendant is properly plugged into a Hand Pendant receptacle; observe Hand Pendant control buttons illuminate green.
    NOTE: *Table Power Switch must be turned "OFF" before disconnecting or connecting Hand Pendant, then re-power "ON".*
  - With table "OFF" plug Hand Pendant into the other Hand Pendant receptacle, turn Power Switch "ON"; observe Hand Pendant control buttons illuminate green.
    NOTE: *Table Power Switch must be turned "OFF" before disconnecting or connecting Hand Pendant, then re-power "ON".*
  - Verify if other Hand Pendant control buttons are functional. If so, replace Hand Pendant.
    NOTE: *Table Power Switch must be turned "OFF" before disconnecting or connecting Hand Pendant, then re-power "ON".*
  - If on battery power, verify proper charge; observe "Battery Status" LED illuminates green.
  - Verify Power Switch is "ON".

- Call OSI Technical Service (800-777-4674) for parts or repair.

- **"Left Lateral Roll" or Right Lateral Roll" not functioning.**
  - Verify Power Cord is plugged into an appropriate AC receptacle and into the Power Cord Socket (located on table-base panel).
  - Press and hold Hand Pendant "Left Lateral Roll" or Right Lateral Roll" control button. Observe tabletop movement.
  - Verify Hand Pendant is properly plugged into a Hand Pendant receptacle; observe Hand Pendant control buttons illuminate green.
    NOTE: *Table Power Switch must be turned "OFF" before disconnecting or connecting Hand Pendant, then re-power "ON".*
  - If on battery power, verify proper charge; observe "Battery Status" LED illuminates green.
  - Verify Power Switch is "ON".
  - Call OSI Technical Service (800-777-4674) for parts or repair.

- **"Return To Level" not functioning.**
  - Verify Power Cord is plugged into an appropriate AC receptacle and into the Power Cord Socket (located on table-base panel).
  - Press and hold Hand Pendant "Return-To-Level" control button. Observe tabletop movement.
  - Disorient tabletop by raising height approximately two inches, tilting tabletop and activating Trendelenburg approximately five degrees.
  - Press and hold Hand Pendant "Return-To-Level" control button. Observe Roll and Trendelenburg functions level first, and after a three-second delay, tabletop moves down to its lowest height position and is level.
  - Call OSI Technical Service (800-777-4674) for parts or repair.

- **Battery Status LED illuminates red.**
  - Table battery system requires charging. Charge batteries minimum three (3) hours; plug power cord into appropriate AC outlet. ***NOTE:*** *Power Switch must be switched "ON".*

- **Battery Status LED remains illuminated red after battery charging.**
  - Call OSI Technical Service (800-777-4674) for parts or repair.

- **Leg Spar is loose (not securely attached to table).**
  - Refer to *User Guide p/n NW0466 – Insertion of Leg Spar.*
  - Verify if Spar Lock Handle is stripped. Call OSI Technical Service (800-777-4674) for parts or repair.

- **Leg Spar not holding vertical position (drifting downward).**
  - Verify "Spar Ball Joint Lock" handle is rotated clockwise to the "Lock" position.
  - Verify Leg Spar is securely attached (fully seated and locked) to table.
  - With wear, the "Spar Ball Joint Lock" handle may require adjustment to allow adequate movement to the "LOCK" position to hold the Leg Spar. Adjust "Spar Ball Joint Lock" position as needed using procedure (see Spar Ball Joint Lock Handle Adjustment Procedure).
  - Call OSI Technical Service (800-777-4674) for parts or repair.

- **Leg Spar not articulating (unable to reposition).**
  - Call OSI Technical Service (800-777-4674) for parts or repair.

8.3 On-line Diagnostics

On-line diagnostics are available from OSI Technical Service Department (800-777-4674).

9.0 REMOVAL and REPLACEMENT of COMPONENTS

9.1 Hand Pendant Control

Part Number: 6807-4

Hand Pendant Control

1. Disconnect Hand Pendant bayonet-type connector from front panel.

9.2 Foot Control

Part Number 6875-5003

Foot Control

1. Disconnect Foot Control eight-pin DIN connector from rear panel.

9.3 Motion-Control Module

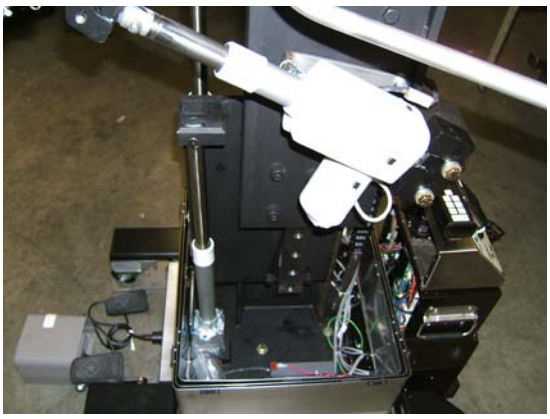
Part Number: 100VAC 6875-4004, 110VAC 6875-4001, 220VAC 6875-4000

Motion-Control Module

1. Disconnect Hand Pendant bayonet-type connector from front panel.
2. Remove Motion-Control Module cover by removing four #10 screws.
3. Remove two ¼-inch screws.
4. Slide-out Motion-Control Module away from base about six inches.
5. Disconnect the six bayonet-type electrical connectors.
6. Remove protective covering from bayonet electrical connectors prior to reinstallation of new unit.

9.4 Internal Batteries

Part Number: NV0801



Battery Location (Base Cover Removed)

If battery fails to hold a charge it should be replaced (see Section 4.5 Battery System).

- Replace only with identical type and size battery.
- Replace both batteries at the same time (also, if needed, foam battery blocks on top of battery).
- Batteries should be replaced once every five (5) years.
- Whenever Base Cover is opened, check battery for signs of corrosion; terminals should be clean and free from corrosion, oil, grease, dirt, or other contaminants.

CAUTION: Electrical shock hazard exists with access covers removed; use caution when working in exposed areas.

LA PRUDENCE: Le danger de choc Electrique existe avec les couvertures d'accès enlevées; la prudence d'usage en travaillant dans les domaines exposés.

WARNING:

Connect batteries only with Power Cord unplugged from power source and main Power Switch to "OFF".

AVERTISSANT:

Reliez les batteries seulement au cordon de secteur débranché du contact de source d'énergie et "alimentation PRINCIPALE" à "off".

Confirm proper installation by performing the following test:

1. Verify power cord is unplugged from power source.
2. Flip main "ON/OFF" Power Switch to "ON" (utilizing battery power).
3. Observe all LED lights on Hand Control turn on and off sequentially.
   NOTE: *If this does not happen, turn "OFF" main power immediately and check if connection of battery is correct and Hand Control is fully connected to the receptacle on the table, repeat above test again. If this does not solve the problem, contact OSI Technical Support at 800-777-4674 for further assistance.*
4. With batteries correctly connected, power cord unplugged from power source and main "ON/OFF" Power Switch is "ON", Hand Control Battery Status Indicator Light will illuminate green or red.
   - Green Battery Status Indicator Light = batteries are charged and installed correctly.
   - Red Battery Status Indicator Light = batteries are connected correctly but are in need of charging. Charge for at least three (3) hours by plugging power cord into grounded, hospital Grade, AC outlet. Toggle main "ON/OFF" Power Switch to "ON"; the switch illuminates green, indicating power is supplied to the table. Full charge should be available after 18 hours.

Battery Type:	Gel cell LED acid batteries, 12 Volt 12 Amp-hour rating.
Battery Size:	150mm long, 98mm wide, 100mm deep.
Battery part number:	NV0801 (two required)

Battery replacement:

1. Disconnect both each cable from the positive (+ / red) battery terminals.
2. Disconnect both each cable from the negative (- black) battery terminals.
3. Remove two ¼-20 nuts from battery securing bolts (on each side of each battery).
4. Remove each battery securing bars (phenolic with rubber pad attached).
5. Carefully lift out each battery.

9.5 Leg Spar Rotation Wheel

Procedure overview:
To replace or adjust the Leg Spar Rotation Wheel (Rotation Wheel), OSI part number 6850-312.

Tools Required:
9/16-inch open-end wrench, 2 required
1-1/8-inch wrench or socket
3/8-16 hex nuts, 2 required
Thread Lock, Semi-permanent (Loc-tite, blue or equivalent)
Grease, White Lithium

Procedure:
NOTE: *Refer to Leg Spar Assembly diagram and Rotation Wheel Exploded View (above).*

1. Position Fine Traction Tube near its center of travel using Traction Crank Handle.
2. Remove Traction Crank Handle by rotating counter-clockwise while holding 3/8-16 hex nut using a 9/16-inch open-end wrench.
3. Rotate threaded shaft, by hand, counter-clockwise until it stops.
4. Remove 3/8-16 hex nut and 3/8-inch flat washer using 9/16-inch open-end wrench.
5. Slide off Handle Cover and Bushing.
6. Remove 3/4-16 Jam Nut and Nut Spacer using 1-1/8-inch wrench or socket.
7. Remove Leg Rotation Wheel by rotating counter-clockwise.

Reassembly:
NOTE: *Refer to Leg Spar Assembly diagram and Rotation Wheel Exploded View (above).*

1. Tighten Rotation Lock moderately (as “hard” usage).
2. Install Leg Rotation Wheel by rotating clockwise; tighten until Rotator slips in lock.
3. Install 3/4-16 Hex Nut with semi-permanent thread-lock and using 1-1/8-inch wrench or socket tighten to approximately 6-8 foot-pounds or until Fine Traction Tube and Foot Coupling begin to rotate.
4. Apply a slight coat of white lithium grease to inner and outer surface of Bushing; install onto Threaded Shaft.
5. Install Handle Cover.
6. Install 3/8-inch flat washer and 3/8-16 hex nut.
7. Attach two 3/8-16 hex nuts onto Threaded Shaft and tighten/lock together. Use these to tighten 3/8-16 hex nut firmly yet Handle Cover must rotate easily.
8. Using locked pair of 3/8-16 hex nuts rotate threaded shaft clockwise until it stops.
9. Remove locked pair of 3/8-16 hex nuts.
10. Install Traction Crank Handle by rotating clockwise while holding 3/8-16 hex nut using a 9/16-inch open-end wrench.
11. Test assembly by running Fine Traction Tube through it full travel using Traction Crank Handle; travel should be smooth and free of any binding. If any binding is found, please call OSI Technical Service (800-777-4674).

9.6 Table Lift Assembly

Part Number NL1254

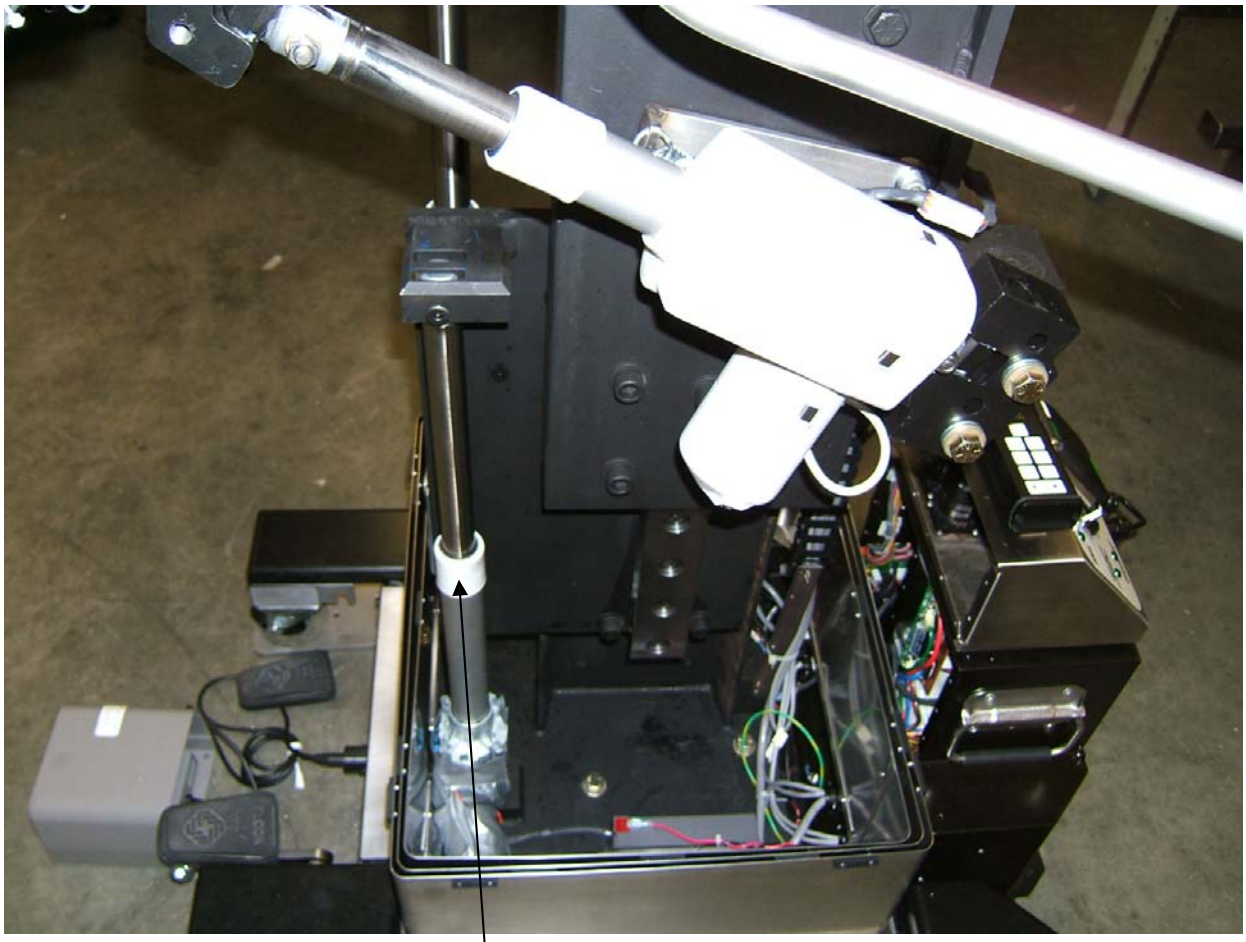


Table Lift Assembly

1. Cover removal.
    a. Remove top-bellows bolts.
    b. Remove bottom-bellows bolts.
    c. Remove ten #6 screws from top sheet metal cover.
    d. Remove five 10-32 screws from top sheet metal cover.
    e. Lift off sheet metal covers (bottom sheet metal covers remain but telescope down).
2. Using a small hydraulic jack under the table lift column, take weight off of the damaged Table Lift Cylinder.
3. Disconnect the damaged Table Lift Cylinder 24 VDC electrical connector.
4. Remove four 10 mm shoulder bolts from damaged Table Lift Cylinder using 7 mm hex key.

9.7 Tilt / Trendelenburg Assembly

Part Number NL1255

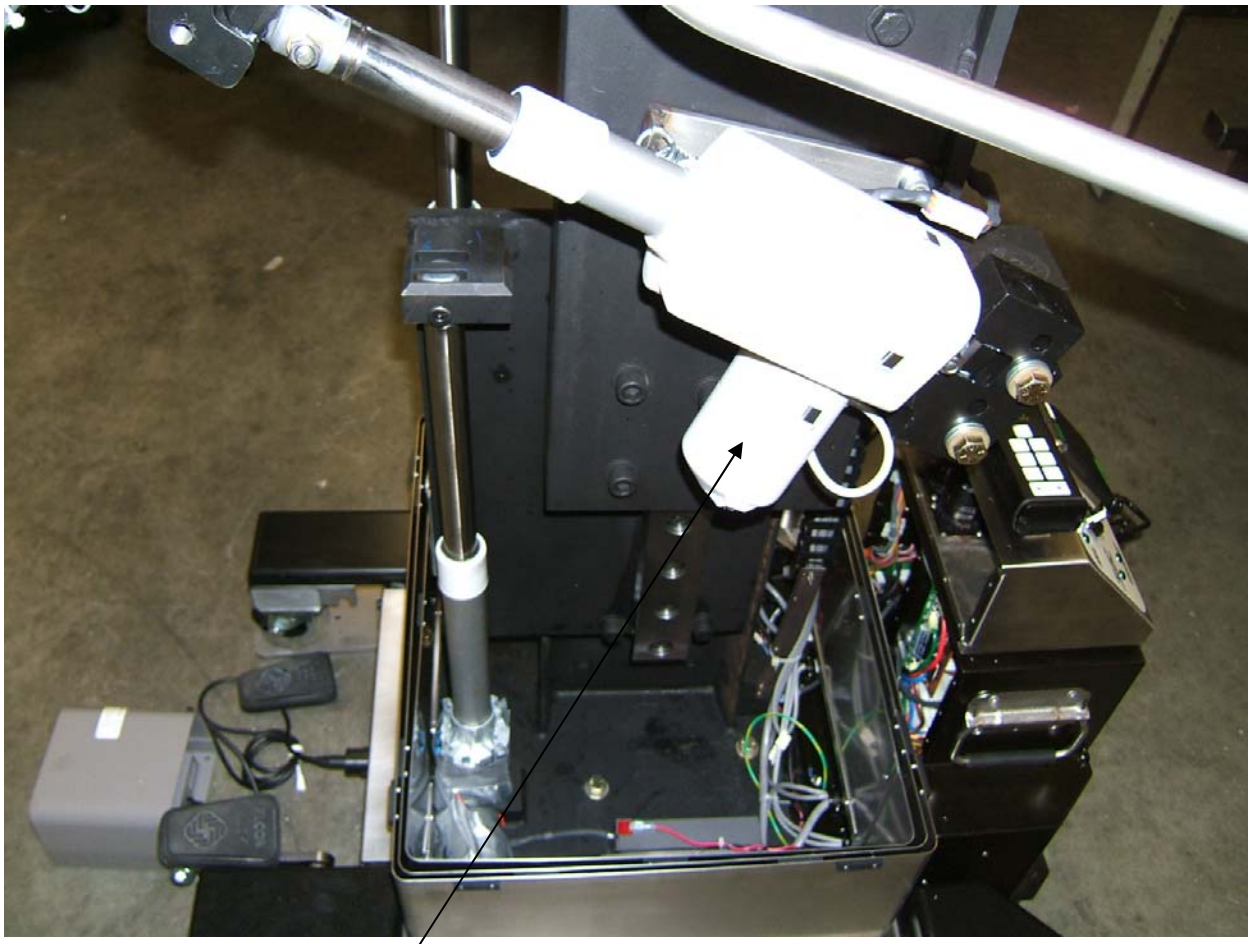


Table Tilt / Trendelenburg Assembly

1. Cover removal.
    a. Remove top-bellows bolts.
    b. Remove bottom-bellows bolts.
    c. Remove ten #6 screws from top sheet metal cover.
    d. Remove five 10-32 screws from top sheet metal cover.
    e. Lift off sheet metal covers (bottom sheet metal covers remain but telescope down).
2. Disconnect the damaged Table Tilt / Trendelenburg Cylinder 24 VDC electrical connector.
   NOTE: *Tabletop will need stability from another person.*
3. Remove four mounting bolts from damaged Table Tilt / Trendelenburg Cylinder.

9.8 Femur Lift Assembly, Left / Right

Part Number: Right 6875-600 / Left 6875-601

1. Disconnect twist-lock 24 VDC electrical connector from damaged Femur Lift Cylinder.
2. Remove Femur Lift Locking knob.

9.9 Caster(s)

Part Number: ND0443

1. Loosen the four 3/8 x 1-inch Caster mounting bolts at the damaged Caster.
2. Raise table base off floor approximately 1-1/2-inches.
3. Remove the four 3/8 x 1-inch Caster mounting bolts.
4. Remove damaged Caster.

Caster Pads
Part Number 6850-75

10.0 TECHNICAL DRAWINGS and PARTS LISTS

10.1 Standard Components Identification Chart

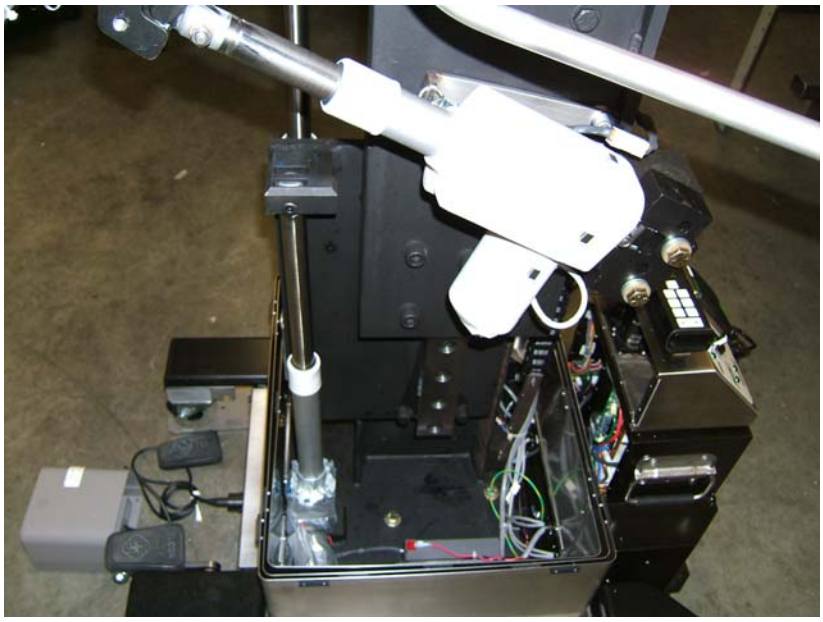


Table Assembly, Right Side (covers removed)

10.2 Replacement / Spare Parts List

• Hand Pendant Control	p/n 6807-4
• Foot Control	p/n 6875-5003
• Motion-Control Module, 100VAC	p/n 6875-4004
• Motion-Control Module, 110VAC	p/n 6875-4001
• Motion-Control Module, 220VAC	p/n 6875-4000
• Internal Batteries	p/n NV0801
• Table Lift Motor	p/n NL1254
• Tilt / Trendelenburg Motor	p/n NL1255
• Femur Lift Motor, Right	p/n 6875-600
• Femur Lift Motor, Left	p/n 6875-601
• Arm board Pivot - black knob	p/n NH0830+3/8 – 16 UNCX, 75 Long SS Socket Head Cap Screw
• Arm board Pivot - silver knob	p/n 914-516
• Caster (4-required)	p/n ND0443
• Femur Lift Emergency Crank Handle	p/n 6875-602
• Caster Pads	p/n 6850-75

10.3 Interconnect Diagram, 120VAC

See inserts at back of this manual.

10.4 Interconnect Diagram, 230VAC

See inserts at back of this manual.

10.5 Table Assembly Bill of Materials

See inserts at back of this manual.

11.0 OSI TECHNICAL SERVICE

Contact for Parts and Service:

For detailed repair information or to order replacement parts, call the OSI Technical Services Department:

A Technical Services representative is available from 7AM-5PM PST, Monday through Friday. Please leave a message before or after business hours.
Please state; your name, phone number, facility name and city, affected equipment model number and nature of problem.

OSI Telephone: **800-777-4674**
An e-mail message may be left anytime at **techsvcs@osisosi.com** or through the Technical Service icon in our web site: **www.osiosi.com**.

To order Replacement Parts (RP):
If unable to identify part - telephone, fax or E-mail to Technical Service.
If part is known - telephone, fax or E-mail part number and description to Customer Service for price and availability.
To place Replacement Parts (RP) order - telephone, fax or E-mail part number, description, price, customer number and method of shipment to Customer Service with purchase order. Indicate that order is for Replacement Parts (RP).

To return damaged parts (RGA):
Identify parts to be returned.
Telephone, fax or E-mail part number and description of parts for return to Customer Service for Return Goods Authorization (RGA) number and Certificate of Disinfection.
Return ship parts with RGA number clearly marked on outside of package.
Clean (disinfect) parts prior to shipping.

To send a part or item for OSI to repair (RA):
If unable to identify part - call, fax or E-mail to Technical Service.
If part is known - telephone, fax or E-mail part number and description to Technical Service for Repair Authorization (RA) number and Certificate of Disinfection.
Clean (disinfect) parts prior to shipping.
Ship part with RA number clearly marked on outside of package.
Part will be evaluated and customer will be contacted with the cost of repair.
After customer approval of repair cost, part will be repaired and return shipped to customer.